PREFACE

Metal Matrix Composites (MMCs) for electronic packaging application have been actively investigated since late 1980's and several electronic packaging components have been commercialized using MMCs. MMCs have been recently developed for electronic packaging applications due to their attractive combination of physical properties, manufacturing flexibility and relatively inexpensive cost. By the combination of a matrix material with reinforcement such as particulates / fibres / whiskers, the required thermo-physical properties of the material will be achieved. MMCs allow to modify the thermo-physical and thermo-mechanical properties of the MMCs by varying wt.% of particulates or fibres, which plays an important role. Additional requirements to the above class of materials can be decided through their use, by varying temperature condition. So, investigations and observations of thermo-physical properties are not only performed at room temperature but also at higher temperatures in order to get the knowledge of performance of the material when put to use.

Advanced integrated circuits generate more heat than older types. Hermetic package materials are developed to protect electronic circuits from moisture and other environmental hazards. Al-based MMCs serve for different hazardous conditions. Therefore, the present work is to study not only the thermal and CTE properties but also the influence of ageing and moisture on mechanical property degradation of developed MMCs along with wear properties. Al/SiC Metal Matrix Composite provides significant cost saving through net-shaped manufacturing.